Taxation more effective than emissions trading in reducing pollution, encouraging cleaner energy, study finds

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(Phys.org)—Rice University economics professor Ted Temzelides and University of Bern economics professor Cyril Monnet used game theoretic modeling to examine alternative mechanisms for reducing emissions in Europe, including the European Union emissions trading system (EU ETS) and taxation.

ETS, also known as cap-and-trade, is a market-based approach used to control pollution by providing market incentives for achieving reductions in the emissions of pollutants. This approach was compared with a flat tax assessed to corporations on the basis of their environmental emissions.

The researchers' findings revealed that while both ETS and taxation can work well in reducing emissions, ETS can lead to volatile prices and speculative trading, which makes it hard for firms to evaluate the costs and benefits of adopting new and cleaner technologies.

"Taxes and permits can work equally well in many cases," Temzelides said. "However, if we take into consideration technological progress and creating incentives for adopting cleaner technologies, firms can plan better knowing what the tax is going to be instead of anticipating volatile prices."

Although Temzelides admitted "tax is not a likable word," he said that

companies can't plan well when prices are volatile. "An emissions tax allows firms to plan better and can result in reduced emissions as a result of adopting newer technologies," he said.

Temzelides said he hopes that future discussion of ways to reduce pollution in the U.S. will involve taxation rather than emission trading for the areas that will choose to regulate emissions.

"The EU experience with ETS has not been a great success so far," he said. "We can avoid repeating the same mistakes by considering a range of options in reducing emissions."

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Provided by Rice University